

# COUNTRY ANALYSIS BRIEFS

## Norway

Last Updated: August 2011

### Background

**Norway provided 12 percent of OECD Europe's crude oil imports and 18 percent of its natural gas imports in 2010.**

Norway, the largest holder of natural gas and oil reserves in Europe, provides much of the oil and gas consumed on the continent. In fact, in 2010, Norway was the second largest exporter of natural gas in the world, second only to Russia. In 2010, crude oil, natural gas, and pipeline transport services accounted for almost 50 percent of Norway's exports value, 21 percent of GDP, and 25 percent of government revenues according to the Norwegian Petroleum Directorate.

Although Norway's oil production peaked in 2001 at 3.42 million barrels per day (bbl/d) and declined to 2.13 million bbl/d in 2010, natural gas production has been steadily increasing since 1993, reaching 3.76 trillion cubic feet (Tcf) in 2010.

The historic agreement between Norway and Russia, which defined their maritime boundaries in the Barents and Arctic Seas and resolved their 40-year old dispute, was fully ratified by both governments in early 2011 and went into effect in July 2011. The agreement requires the two countries to jointly develop oil and gas deposits which cross over their boundaries, a 176,000 square kilometer maritime area which straddles their economic zones in the Barents and Arctic Seas.

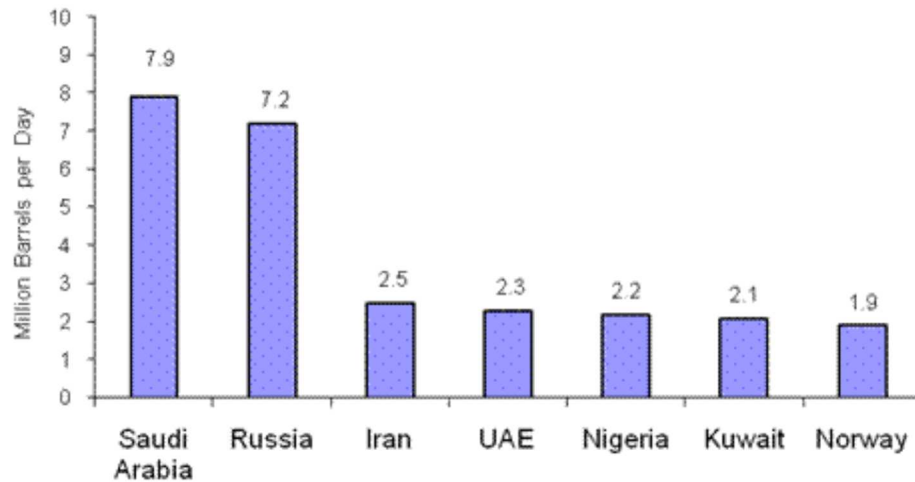


### Oil

**Norway is the largest oil producer and exporter in western Europe.**

According to *The Oil and Gas Journal* (OGJ), Norway had 5.67 billion barrels of proven oil reserves as of January 1, 2011, the largest oil reserves in Western Europe. All of Norway's oil reserves are located offshore on the Norwegian Continental Shelf (NCS), which is divided into three sections: the North Sea, the Norwegian Sea and the Barents Sea. The bulk of Norway's oil production occurs in the North Sea, with smaller amounts in the Norwegian Sea and new exploration and production activity occurring in the Barents Sea.

**World's Top Net Oil Exporters, 2010**



Source: EIA

### Sector Organization

Statoil ASA was created by the merger of Statoil and Norsk Hydro in October 2007. It is an international energy company that is 67-percent-owned by the Norwegian government and is the largest operator in Norway, controlling 80 percent of Norway's oil and gas production. It also has interests in more than 30 other countries. State-owned Petoro manages the commercial aspects of the government's financial interests in petroleum operations and associated activities. It acts as the licensee for production licenses and companies. International oil majors have a sizable presence in Norway.

Norway's state subsidy of oil and gas exploration, introduced in 2005, refunds 78 percent of the exploration costs to the companies. In addition, taxes from oil activities have been reduced, which has attracted additional international investment in Norway's oil and gas sectors.

### Exploration and Production

In 2010, Norway produced 2.13 million bbl/d of oil liquids, of which about 88 percent was crude oil. Norway's petroleum production has been gradually declining since 2001 as oil fields have matured. However, Norway's National Petroleum Directorate (NPD) expects that production will rise marginally in 2011 over 2010 and remain fairly steady over the next few years. But in the longer term the number and size of new discoveries will be a critical factor in maintaining production levels. The Norwegian government is focusing on increasing recovery in producing fields, further exploring areas that are already open for the petroleum industry, and opening new areas to exploration. In 2010, 45 exploration wells were drilled, 16 discoveries were made, and 4 new fields came onstream. Norway's national statistics bureau reported that it estimates record total investments in oil and gas activity of US\$21 billion in 2011.

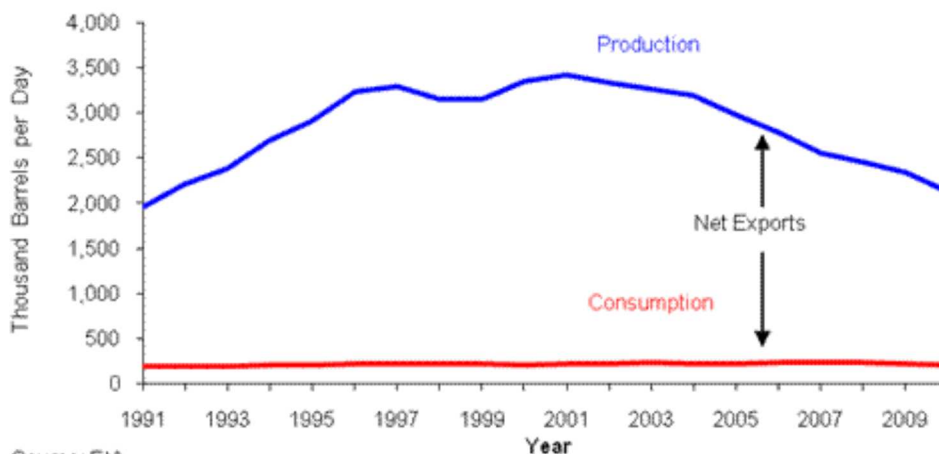
In April 2011, it was reported that Statoil and Eni struck oil and gas at the Skrugard prospect in the Barents Sea, making what could prove to be Norway's biggest discovery in ten years. Skrugard is believed to hold as much as 250 million barrels of recoverable reserves, which would eclipse the nearby Goliat field, currently the largest at 240 million barrels. Statoil announced that it hopes to begin Skrugard production in 5 to 10 years. Skrugard is located 120 miles from the coast and well north of the Goliat and Snovit fields which could make it a production hub for other potential discoveries in the area as more exploration wells are drilled.

Goliat is the first oil field to be developed in the Barents Sea. Goliat was discovered in 2000 and is

about 40 miles offshore of the town of Hammerfest, which will be its land base. The field has two separate main reservoirs, both with an overlying natural gas cap, and low pressures in the reservoirs require that the gas be reinjected. In May 2009, the Norwegian government approved the plan for development and operation of the Goliat oil field by licensees Eni (65 percent) and Statoil (35 percent), and construction is currently in full swing. The field is expected to reach peak production of about 100,000 bbl/d when it comes onstream in November 2013, and 45.9 billion cubic feet (Bcf) of natural gas is expected to be produced and reinjected annually starting in 2014.

Continued exploratory drilling in frontier areas in the Norwegian Sea and the Barents Sea will be important for the mapping and evaluation of the resource potential in these areas. Exploration interest in the NCS remains strong on the part of major international oil companies. The most recent licensing round was completed in April 2011, when Norway awarded 24 new licenses, half in the Norwegian Sea and half in the Barents Sea. Of the 37 companies that applied for stakes, 29 were awarded participating interests and 13 were awarded operatorships. Norway also upgraded its safety requirements for deepwater offshore drilling in an attempt to keep domestic opposition to Barents Sea drilling at bay. In addition, Statoil in late 2010 announced a spending plan of US\$1.5 billion for 2011, focusing on upgrades of existing installations to reduce downtime and thereby cutting future maintenance expenses.

**Norway Total Oil Production and Consumption, 1991-2010**



### Oil Exports

According to the International Energy Agency (IEA), Norway exported an estimated 1.6 million bbl/d of crude oil in 2010. The 5 top importers of Norwegian oil in 2010 were the United Kingdom (43 percent), the Netherlands (18 percent), France (7 percent), Germany (5 percent), and the United States (5 percent).

### Pipelines

Norway has an extensive network of subsea oil pipelines, including 8 major domestic oil pipelines with a total capacity of more than 2.2 million barrels per day which connect offshore oilfields with onshore processing terminals. There are numerous smaller pipelines that connect North Sea fields to either the Oseberg Transport System or the Troll I and II pipeline systems, with the remaining offshore production brought ashore via shuttle tanker.

#### *International Oil Pipeline*

ConocoPhillips operates the 900,000-bbl/d-capacity subsea Norpipe, which connects Norwegian oil fields in the Ekofisk system, as well as associated fields in both Norwegian and UK waters, to the oil terminal and refinery at Teesside, England. The pipeline is a 50-50 joint venture between ConocoPhillips and Statoil.

### Refining

According to OGJ, Norway had 319,000 bbl/d of crude oil refining capacity in January 2011. The country has two major refining facilities: the 116,000-bbl/d Slagen plant, operated by ExxonMobil, and the 203,000-bbl/d Mongstad plant, operated by Statoil. Norway is an important supplier of gasoline and diesel fuel to the European Union, as the production of these fuels at the Mongstad

plant complies with stringent EU environmental rules. Statoil dominates the retail products market in Norway and the company has also expanded aggressively into other European markets. The port of Mongstad is the largest in Norway measured by tonnage, and second only to Rotterdam for shipping crude oil and refined products in Europe.

## Natural Gas

**Norway is the second largest exporter of natural gas after Russia, and ranks fifth in world natural gas production.**

According to OGI, Norway had 72 trillion cubic feet (Tcf) of proven natural gas reserves as of January 2011. Despite the maturation of its major natural gas fields in the North Sea, Norway has been able to sustain annual increases in total natural gas production by continuing to develop new fields.

### Production and Development

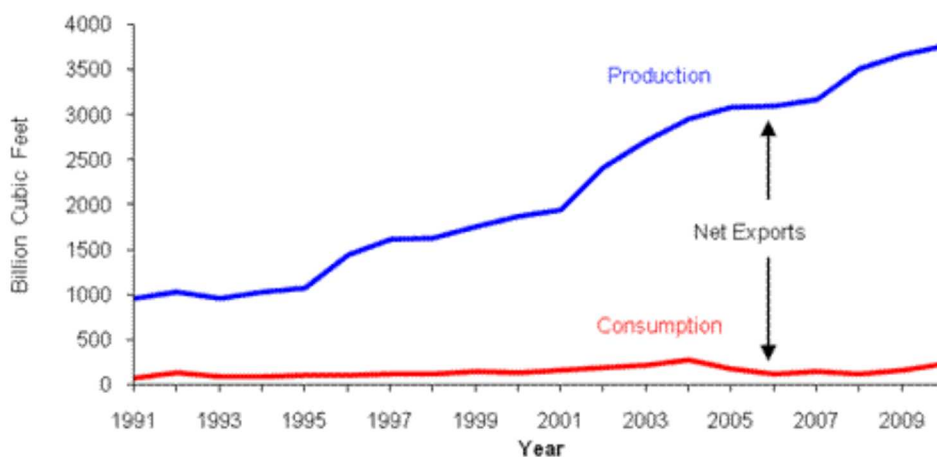
Norway produced 3.76 Tcf in 2010, up from 3.65 Tcf in 2009, and has been increasing its natural gas production every year since 1994. Norway's NPD forecasts production of 3.85 Tcf in 2011, reaching 3.96 Tcf in 2015.

Norway's single largest natural gas field is Troll, which produced 0.886 Tcf in 2010, according to the NPD, representing about one-quarter of Norway's total natural gas production. The three other largest producing fields in 2010 were Ormen Lange (0.664 Tcf), Asgard (0.381 Tcf), and Sleipner Ost (0.265 Tcf). These 4 fields accounted for about 60 percent of Norway's total natural gas production.

Gjoa oil and gas field, developed by Statoil and GDF Suez, began production in January 2011. Located in the North Sea, Gjoa has a daily production capacity of 600 million cubic feet of gas and 87,000 barrels of oil. The gas is transported directly via pipeline to St. Fergus, Scotland, while the oil will be transported to the Mongstad refinery through the Troll II pipeline. The field is expected to be in production for at least the next 15 years, but the installations are designed for an operating life of 30 years. For the first time in the offshore oil and gas industry, the floating platform is fully powered by electricity from the mainland. The Gjoa platform opens a new area in the North Sea for production, and its infrastructure will be a hub for future developments.

Statoil is a partner with Total in Gazprom's development of the Shtokman gas and condensate field in the Barents Sea, 342 miles offshore Russia. Phase 1 of field development is projected to provide annual production of 837 Bcf/year. The distribution of production between LNG and pipeline volumes via Nord Stream has not been decided. The project was delayed in 2010 amid the world financial crisis and slump in gas demand but it was reported in June 2011 that Gazprom reconfirmed the project's timelines, with a final investment decision projected for end-2011 and startup in 2016/2017.

**Norway Natural Gas Production and Consumption, 1991-2010**



Source: EIA

### Sector Organization

As is the case with the oil sector, Statoil dominates natural gas production in Norway. A number of international oil and gas companies, including ExxonMobil, ConocoPhillips, Total, Shell, and Eni

have a sizable presence in the natural gas and oil sectors, working in partnership with Statoil.

State-owned Gassco is responsible for administering the natural gas pipeline network. The company also manages Gassled, the network of international pipelines and receiving terminals that exports Norway's natural gas production to the United Kingdom and continental Europe.

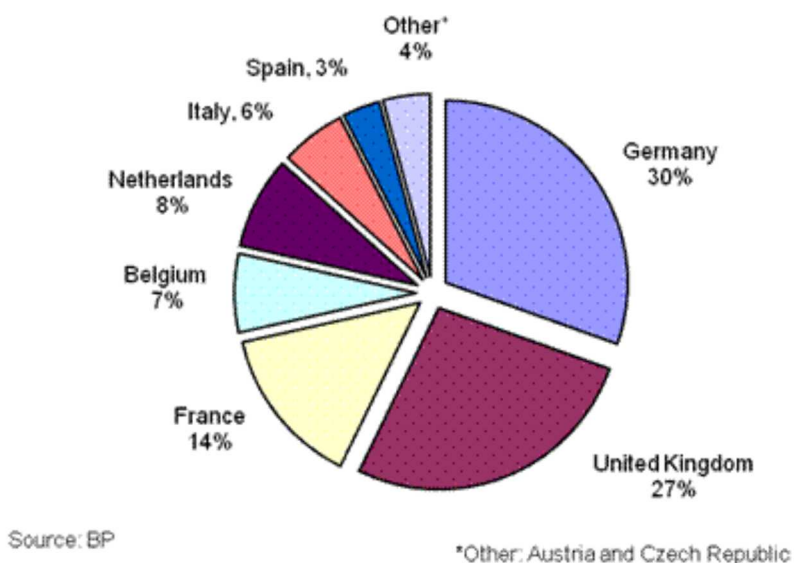
### Exports

Norway exported about 3.6 Tcf of natural gas in 2010, 94 percent of its production. Most of it was transported to Europe via its extensive export pipeline infrastructure and a smaller amount via liquefied natural gas (LNG) tanker. The country is the second-largest supplier of natural gas to the European Union, behind Russia, supplying about 18 percent of Europe's total gas demand in 2010. The largest outlets for Norway's natural gas pipeline exports in 2010 were Germany, the United Kingdom, and France.

### International Gas Pipelines

Norway operates several important natural gas pipelines which connect directly with other European countries, specifically France, the United Kingdom, Belgium, and Germany. Franpipe, with a capacity of 692 billion cubic feet per year (Bcf/y), exports gas to Dunkirk, France. Zeepipe I, IIA, and IIB have a total capacity of 2,384 Bcf/y and transport gas to Zeebrugge, Belgium. Europipe I and II, with a total capacity of 1,423 Bcf/y, export to Dornum, Germany, while Norpipe, with a total capacity of 572 Bcf/y, runs to Emden, Germany. Vesterled, capacity 463 Bcf/y, links to St. Fergus, Scotland, while Langeled, capacity 893 Bcf/y, links to Easington on the east coast of England. These pipelines are all operated by Gassco. Some pipelines run directly from Norway's major North Sea production facilities to Gassco-owned processing facilities in the receiving country, while other pipelines connect Norway's onshore processing facilities to other European markets.

**Norway Natural Gas Pipeline Exports, 2010**



### Liquefied Natural Gas (LNG)

According to Cedigaz estimates, in 2010, shipments of Norwegian LNG totaled 138 Bcf, up from 112 Bcf in 2009. OECD European countries received about 74 percent of the total, with Spain importing almost half of that. The United States imported about 5 percent or 26.8 Bcf. Norway has long-term contracts with Spain's Iberdrola and the U.S. company El Paso.

Norway became an LNG exporter in 2007 with the beginning of commercial production from the Snøhvit gas field, Norway's first natural gas development in the Barents Sea. Statoil operates an LNG export terminal and liquefaction facility at Melkøya, near Hammerfest. The Melkøya facility, the first large-scale LNG export terminal in Europe, has a capacity of about 200 Bcf/y and is connected by pipeline with the Snøhvit gas field. The Snøhvit field produced 0.166 Tcf in 2010. The Melkøya facility is producing at full capacity and Statoil is currently studying the expansion possibilities of adding a second train. Field development plans may be decided by the end of 2013 and additional LNG production could begin in 2018. The project's expansion would likely be fed by the nearby Askeladd field, which is due onstream in 2014 or 2015, and other new projects in the

area.

## Links

### EIA Links

[EIA - Country Information on Norway](#)

### U.S. Government

[CIA World Factbook - Norway](#)

[U.S. Embassy in Oslo](#)

### Foreign Government Agencies

[Norwegian Petroleum Directorate \(NPD\)](#)

[Norwegian Ministry of the Environment](#)

[Statistics Norway](#)

### Oil and Natural Gas

[BP Norway](#)

[ConocoPhillips Norway](#)

[Gassco](#)

[INTSOK](#)

[Petoro](#)

[Statoil](#)

### Coal

[Store Norske Spitsbergen Kulkompani](#)

### Electricity

[Industrikraft](#)

[Naturkraft](#)

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## Sources

Bloomberg

BMI Europe Oil and Gas Insights

Business Monitor Online

Business World

Cedigaz

Dagens Naeringsliv

Datamonitor Newswire

Economist Intelligence Unit

Energy Information Administration (EIA)

Eni

ENP Newswire

Gassco

Global Insight

International Energy Agency (IEA)

International Oil Daily

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